

Fault Tolerance on Radio Station

Why this is so important?

Silence on air is the most expected trouble for every radio station. Due to our experience sooner or later this happens although we wish you not to get this situation. If this is happening several times in a short time frame this is much worse. The results are known: you are losing audience, ratings are falling down, and advertisers are turning away. How to avoid that? What is the main reason of failures?



Human Factor

Statistical figures of our support department tell us that this is the human factor. More often these are commonplace mistakes of board operators, sound engineers, and editors: fader closed not in time, empty schedule blocks, incorrect switching at a router, phase shift in left and right channels, erased content etc.



System Software Failure

The next often failure reason is influence from the 3rd party applications used on a radio station (anti-virus software, backup applications, remote access utilities) as well as incorrectly configured system of Microsoft update. Most likely, the needed file could not be accessed (e. g. blocked by anti-virus). Another often met issue could be caused by the system software updates.



Hardware Failure

Physical failures of hardware are encountered also frequently, compared with the described above reasons. Electrical power failures, on-air workstation or storage system hard drive failures, Ethernet switches and routers failures, damage of cabling system, audio cards, mixing consoles, other studio equipment etc.



Software Failure

Software without errors is equal to world without diseases. Errors existed, exist and will exist. But radio broadcasting industry demands higher requirements to reliability of products. Errors causing crash of application, loss of data and control are not acceptable. We are proud of the fact that our applications are working in 7/24 mode months without special attention, restart or correction actions. We are paying special attention to that.

It is important to understand, that failures are inevitable. A question may be asked: what shall we do? The answer is – we have to be prepared! The task to engineers department is to provide minimal probability of failure, to minimize risks and off-air time in the case if failure is happened. Our recommendations are given below.

In order to minimize the human factor you have to train your personnel in a professional way. Self-educating by the hit and miss method is not a good idea. Professional training gives systematic knowledge compared to random one. The psychological atmosphere at the facility is very important for the process as well as the working load and working schedule of employees. Emergency situation instructions are of great importance for the staff. We also recommend to make use of administration system of our product providing restrictions of user rights and their access only to the functions they are in charge of.

It is essential to carefully select system and 3rd party software, to configure them in a right way for a complete compatibility with radio automation system in order to avoid interaction failures. Much sense has careful setting up of the software update policy: type of updates and time of execution. If you decide to change to another anti-virus software or new hardware platform, do not forget to consult the developers of automation system.

The most simple problems to be fixed refer to hardware failures of equipment. Preventive diagnostics using monitoring system which involves our support department, reserving and utilizing special automatic prevention mechanisms dramatically lower the risk of failure. Permanent monitoring of status of equipment and radio automation system helps to eliminate failures, and in the event of a failure – to carefully diagnose the reason of it thus preventing repeated failure. Reserving of On-Air workstation provides means for easy recovering the airing process without loss of functionality. Special software modules reserve on-air content on a local hard drive, provide smooth change-over from main to reserve workstation without audible program interruption, fill in gaps in a schedule, automatically restart application in case of its crash...

In the case if error happens, the task of support department is to localize it. User request is being registered in the web based monitoring system on developer's resource (support.digispot.ru/trac). Error has to be described in detail by a user (with the help of our support engineers) and then our testers will try to replicate it in our special test center. Thorough error report with all the details is being forwarded to the developers team (if a workaround in existing application version is possible, testers are informing customers immediately). Developers are correcting source code and as soon as a new build is ready, customers are getting notifications that error is fixed. Normally («normal» error severity level), fixing of an error is happening within a working week. In case of «blocking» or «critical» errors, fixes may appear in one or two days.

They choose

DIGISPOT®
Broadcast - System II

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Full Functional Radio Automation System

Radio broadcasting AM/FM/Internet

Network solutions

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News processing: from news acquisition to newscast delivery

Media planning

Musical planning

Production

More than 1000 radio stations in Russia and worldwide

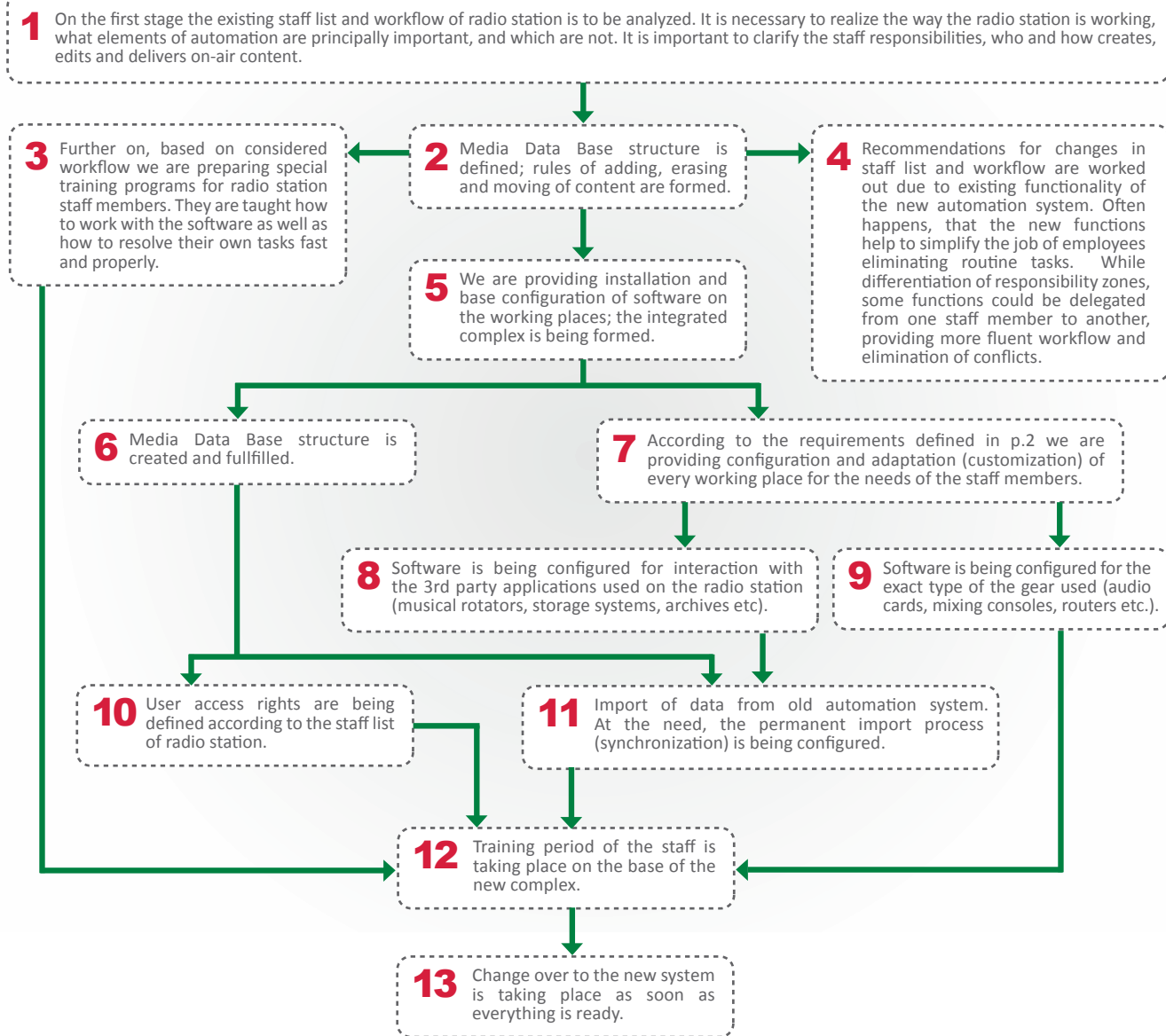
Installation and commissioning

of automation system on radio station



If you are creating radio from a scratch you have many things to do. You are choosing software and hardware solutions taking into account your tasks, terms and opportunities. If your radio station is already on air and you are stepping in modernization process, situation becomes much more interesting. During installing and commissioning of your new system you will have to take into account the existing workflow, integration tasks and data transfer, retraining your personnel and probably changing the radio station staff list. And all that should be done without interruption of on-air program.

Commissioning process of a new automation system on radio station includes the following steps:



The result of the described process is flawless and unapparent to the audience change over to the new complex with minimal changes in radio station's structure, optimization of the working processes and keeping staff comfortable. The whole process can take from several days for small rebroadcasting radio station to several months for big facilities with hundreds of working places and complex interactions between departments.

ONE DAY
AT A RADIO STATION
WITH
DIGISPOT® II
Broadcast - System II

Newsroom
DIGISPOT® II R-News
an application for acquisition, production, planning and newscast delivery.
DIGISPOT® II BCS-Editor
a text editor and audio multi-channel production tool.

Reporter loads the textual information into the system and edits it in **Subjects Editor**, while the sound data (interviews, comments etc.) is edited in **DIGISPOT® II BCS-Editor**.

Journalist selects the stories from **News Browser** which is automatically filled by **DIGISPOT® II DB Import**. He edits them in **Subjects Editor** and places the subjects in the schedule, where they become available for announcers and newscasters in **News Agenda window**.

Program Department
DIGISPOT® II Mag
musical rotator, application for musical play-list generation.

Relying on the research data **Music Editor** (or a Music Board) takes decisions on the songs' positions in the music categories and on the rules of the current music rotation. All the changes are introduced into the settings of **DIGISPOT® II Mag** rotation, which creates the music schedule. The music schedule created by the rotation engine is merged with the advertising schedule, in which the fixed duration stop sets are filled up to the desired length with the help of **DIGISPOT® II DecroAutomat**. Local commercials of the central Network Region are cut off from the other Network Regions' thanks to the special schedule broadcasted to the satellite during local commercial clusters within the fixed duration stop sets.

Central Rack Room, Central Control Room
DIGISPOT® II MDB
DIGISPOT® II Agent
MDB-import
DIGISPOT® II OnAir Logger
DIGISPOT® II DDB Agent

DIGISPOT® II MDB media database is a specialized database running under Microsoft SQL Server and designed for centralized storage of the material. Being the core of the automation system, it provides multi-user access to the materials of the radio station from several workplaces simultaneously.
DIGISPOT® II DB Import acquires news stories for the news editorial from news agencies via various channels, i. e. satellites (ITPC, NITF), email (POP3), and FTP servers. Then, all the acquired material is automatically sorted and indexed for easy further search. The Distributed Database Agent **DIGISPOT® II DDB Agent** delivers the regional advertising schedule created by the traffic manager to the regional agents. **DIGISPOT® II OnAir Audio Logger** provides recording of multiple programs of the radio station at each frequency; the recorded content could be immediately reused in the radio programs.

Sales Manager deals with commercial partners and creates for each of them a partner's profile in **DIGISPOT® II Media Planner** where all the advertising campaigns, invoices etc. for this partner will be stored. Then, the sales manager places the partner's commercial audio-spots in the system and creates either a local media plan for their airing at a single radio-station of the network, or a multilocal media plan for a campaign covering several frequencies merged into a single Network Region.

Sales Department
DIGISPOT® II Media Planner
an application for planning and accounting of advertisement campaigns.

Production Department
DIGISPOT® II Djin Plan
an application for schedule preparation based on MDB.
DIGISPOT® II BCS-Editor
a text editor and audio multi-channel production tool.

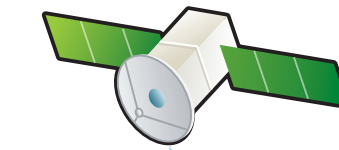
Traffic Manager creates the required amount of advertising schedules for the entire broadcast network (if applicable) in **DIGISPOT® II Media Planner**, on the basis of preliminary media plans. Fixed duration stop sets (advertisement blocks) are filled, if necessary, with special formatted production elements up to the standard length with the help of **DIGISPOT® II DecroAutomat**.

Production Department (sound editors) creates audio materials (commercial and promo spots, program decoration elements etc) with the help of **DIGISPOT® II BCS Multi Channel Audio Editor** or **MAGIX Samplitude Pro**. Sound editors add audio content to the elements created by the Traffic Manager and Music Editor in the database, and then adjust mark them using **DIGISPOT® II Djin Plan** application. Hence, use of Media Database makes it possible to separate the process of scheduling of the items from the process of filling them with audio content.

On-Air Control Room
DIGISPOT® II Djin OnAir
an application for automated, semi-automated and manual on-air delivery based on schedule.
DIGISPOT® II R-News
an application for acquisition, production, planning and newscast delivery.

The Broadcast Studio of the main network station has two **DIGISPOT® II Djin OnAir** workstations. One of them is sending program to the transmitter in the main network region and the main-time signal to the satellite. The other is automatically engaged at the beginning of every local commercial cluster for playing of the specially prepared material only to the satellite. This keeps the main network station's commercials from being heard in other Network Regions.

Presenter or Newscaster reads the news from **News Schedule** and launches all the necessary sound elements, such as beds, bumpers, soundbites etc. Meanwhile, editors and producers can modify the **Subjects in News Schedule** "on the move", according to the most fresh versions of the stories.



Main City Broadcasting

Regional Broadcasting

On-Air Control Room
DIGISPOT® II Djin 777
a low budget application for rebroadcasting and own programs support.

At a regional network radio station, **DIGISPOT® II Djin 777** is rebroadcasting the main station's signal received via satellite. At the same time, local commercial clusters containing the spots prepared for a particular Network Region by the central network station are added automatically to the local schedule by **DIGISPOT® II DDB Agent** without any additional import/export operations. A certain sound sample, or DTMF signal, placed in the main network station's schedule, launches a local fixed duration commercial cluster in the region, while the satellite is broadcasting a special production element (or a cluster of elements) trimmed exactly to the same standard duration. Hence, both clusters end at the same moment, so the change over to the main station signal sounds natural for the listeners.

Regional Sales Manager using **DIGISPOT® II Media Planner** is able to place local advertisement campaigns not only via Traffic Manager of his Network Region, but as well via Traffic Manager of the main Network Region.

Regional Sales Department
DIGISPOT® II Media Planner
an application for planning and accounting of advertisement campaigns.